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NEWS 2		"Ask CAS" for self-help around the clock
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NEWS 4	Feb 24	TEMA now available on STN
NEWS 5	Feb 26	NTIS now allows simultaneous left and right truncation
NEWS 6	Feb 26	PCTFULL now contains images
NEWS 7	Mar 04	SDI PACKAGE for monthly delivery of multifile SDI results
NEWS 8	Mar 24	PATDPAFULL now available on STN
NEWS 9	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS 10	Apr 11	Display formats in DGENE enhanced
NEWS 11	Apr 14	MEDLINE Reload
NEWS 12	Apr 17	Polymer searching in REGISTRY enhanced
NEWS 13	Jun 13	Indexing from 1947 to 1956 added to records in CA/CAPLUS
NEWS 14	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS 15	Apr 28	RDISCLOSURE now available on STN
NEWS 16	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS 17	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS 18	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS 19	May 19	Simultaneous left and right truncation added to WSCA
NEWS 20	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS 21	Jun 06	Simultaneous left and right truncation added to CBNB
NEWS 22	Jun 06	PASCAL enhanced with additional data
NEWS 23	Jun 20	2003 edition of the FSTA Thesaurus is now available
NEWS 24	Jun 25	HSDB has been reloaded
NEWS 25	Jul 16	Data from 1960-1976 added to RDISCLOSURE

NEWS EXPRESS	April 4 CURRENT WINDOWS VERSION IS V6.01a, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
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=> s geminivirus and silenc?
L1          36 GEMINIVIRUS AND SILENC?

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2          22 DUP REM L1 (14 DUPLICATES REMOVED)

=> d 1-10 ti

L2   ANSWER 1 OF 22  CAPLUS  COPYRIGHT 2003 ACS        DUPLICATE 1
TI   Tomato yellow leaf curl Sardinia Virus Rep-derived resistance to
     homologous and heterologous Gemini-viruses occurs by different mechanisms
     and is overcome if virus-mediated transgene silencing is
     activated

L2   ANSWER 2 OF 22  BIOSIS  COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI   Transcriptional silencing of geminiviral promoter-driven
     transgenes following homologous virus infection.

L2   ANSWER 3 OF 22  CAPLUS  COPYRIGHT 2003 ACS
TI   Geminiviruses. Gene functions, replication and host interactions

L2   ANSWER 4 OF 22  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2003)                                             DUPLICATE 2
TI   Progression of geminivirus-induced transgene silencing
     is associated with transgene methylation.

L2   ANSWER 5 OF 22  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2003)                                             DUPLICATE 3
TI   Mutation of three cysteine residues in Tomato yellow leaf curl virus-China
     C2 protein causes dysfunction in pathogenesis and posttranscriptional
     gene-silencing suppression.

L2   ANSWER 6 OF 22  BIOSIS  COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI   Virus variation in relation to resistance-breaking in plants.

L2   ANSWER 7 OF 22  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2003)                                             DUPLICATE 4
TI   Geminivirus-based vectors for gene silencing in
```

Arabidopsis.

L2 ANSWER 8 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 5
TI **Geminivirus** sequences as bidirectional transcription termination/polyadenylation signals for economic construction of stably expressed transgenes.

L2 ANSWER 9 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Virus resistant transgenic plants for environmentally safe management of viral diseases.

L2 ANSWER 10 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Meristematic gene **silencing** using **geminivirus**-derived vectors.

=> d 2 ab

L2 ANSWER 2 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB Promoters isolated from the Tomato leaf curl virus (TLCV) drive both constitutive and tissue-specific expression in transgenic tobacco. Following systemic TLCV infection of plants stably expressing TLCV promoter:GUS transgenes, transgene expression driven by all six TLCV promoters was **silenced**. **Silencing** in the TLCV coat protein promoter: GUS plants (V2:GUSDELTAC) was characterized in more detail. Transgene **silencing** observed in leaf, stem, and preanthesis floral tissue occurred with the continued replication of TLCV in host tissues. Infection of the V2:GUSDELTAC plants with heterologous geminiviruses did not result in transgene **silencing**, indicating that **silencing** was specifically associated with TLCV infection. Nuclear run-on assays indicated that **silencing** was due to the abolition of transcription from the V2:GUSDELTAC transgene. Bisulfite sequencing showed that **silencing** was associated with cytosine hypermethylation of the TLCV-derived promoter sequences of the V2:GUSDELTAC transgene. Progeny derived from V2:GUSDELTAC plants **silenced** by TLCV infection were analyzed. Transgene expression was **silenced** in progeny seedlings but was partially reactivated in the majority of plants by 75 days postgermination. Progeny seedlings treated with the nonmethylatable cytosine analog 5-azacytidine or the histone deacetylase inhibitor sodium butyrate exhibited partial reactivation of expression. This is the first report of the hypermethylation of a virus-derived transgene associated with a DNA virus infection.

=> d 2 au

L2 ANSWER 2 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AU Seemanpillai, Mark; Dry, Ian; Randles, John; Rezaian, Ali (1)

=> d 2 so

L2 ANSWER 2 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Molecular Plant-Microbe Interactions, (May 2003, 2003) Vol. 16, No. 5, pp. 429-438. print.
ISSN: 0894-0282.

=> d 3 ab

L2 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2003 ACS

AB A review on the plant viral diseases by geminiviruses, classification of geminiviruses, structure of viral particles, genome organization and functions of genes (mastrevirus RepA, Rep, REn, TrAP, Cp, etc.), mechanism of replication of geminiviral DNAs, induction of S phase entry of plant differentiated cells by geminiviruses, and **geminivirus** genes which suppress gene **silencing** of infected cells.

=> d 3 so

L2 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2003 ACS
SO Kagaku to Seibutsu (2003), 41(5), 311-317
CODEN: KASEAA; ISSN: 0453-073X

=> d 4 ab

L2 ANSWER 4 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 2

=> d 4 so

L2 ANSWER 4 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 2
SO The New phytologist, Sept 2002. Vol. 155, No. 3. p. 461-468
Publisher: Cambridge : Cambridge University Press.
CODEN: NEPHAV; ISSN: 0028-646X

=> d 4 au

L2 ANSWER 4 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 2
AU Rodman, M.K.; Yadav, N.S.; Artus, N.N.

=> d 5 ab

L2 ANSWER 5 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 3
AB The nuclear localized C2 protein of the monopartite begomovirus Tomato yellow leaf curl virus-China (TYLCV-C) contributes to viral pathogenicity. Here, we have investigated TYLCV-C C2 protein domains that play a role in the phenotype. Alignment of the C2 protein with 67 homologues from monopartite and bipartite begomoviruses revealed that a putative zinc-finger motif C36-X1-C38-X7-C46-X6-H53-X4-H58C59 and four potential phosphorylation sites (T52, S61, Y68, and S74) are highly conserved. When expressed from a Potato virus X (PVX) vector, TYLCV-C C2 protein mutants C2-T52M, C2-H58S, C2-C59S, C2-S61R, and C2-S74D, like the wild-type C2 protein, induced local necrotic ringspots and systemic necrosis in Nicotiana benthamiana plants. Mutants C2-H53P and C2-Y68D produced irregular necrotic lesions on inoculated leaves that were distinct from the wild-type phenotype. In contrast, mutants C2-C36R, C2-C38N, and C2-C46I induced chlorosis and mosaic symptoms rather than necrosis. We demonstrate that TYLCV-C C2, like its counterpart in the bipartite

begomovirus African cassava mosaic virus, mediates suppression of posttranscriptional gene **silencing** (PTGS). Moreover, the individual mutations C36R, C38N, and C46I abolished the ability of C2 protein to suppress PTGS. These results suggest that the three cysteine residues within the putative zinc-finger motif are essential for C2 protein to induce necrosis and to act as a suppressor of PTGS.

=> d 5 au

L2 ANSWER 5 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 3
AU Van Wezel, R.; Dong, X.; Liu, H.; Tien, P.; Stanley, J.; Hong, Y.

=> d 7 ab

L2 ANSWER 7 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 4
AB Gene **silencing**, or RNA interference, is a powerful tool for elucidating gene function in Caenorhabditis elegans and Drosophila melanogaster. The vast genetic, developmental and sequence information available for Arabidopsis thaliana makes this an attractive organism in which to develop reliable gene-**silencing** tools for the plant world. We have developed a system based on the bipartite **geminivirus** cabbage leaf curl virus (CbLCV) that allows **silencing** of endogenous genes singly or in combinations in Arabidopsis. Two vectors were tested: a gene-replacement vector derived from the A component; and an insertion vector derived from the B component. Extensive **silencing** was produced in new growth from the A component vectors, while only minimal **silencing** and symptoms were seen in the B component vector. Two endogenous genes were **silenced** simultaneously from the A component vector and **silencing** of the genes was maintained throughout new growth. Because the CbLCV vectors are DNA vectors they can be inoculated directly from plasmid DNA. Introduction of these vectors into intact plants bypasses transformation and extends the kinds of **silencing** studies that can be carried out in Arabidopsis.

=> d 7 so

L2 ANSWER 7 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 4
SO The Plant journal : for cell and molecular biology, Apr 2002. Vol. 30, No. 1. p. 107-114
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> d 10 ab

L2 ANSWER 10 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

=> d 10 so

L2 ANSWER 10 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

SO Plant Biology (Rockville), (2002) Vol. 2002, pp. 61.
http://www.aspb.org/meetings/. print.
Meeting Info.: Annual Meeting of the American Society of Plant Biologists on Plant Biology Denver, CO, USA August 03-07, 2002 American Society of Plant Biologists
.

=> d 11-22 ab

L2 ANSWER 11 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

L2 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB The introduction of DNA episomes based on the geminiviruses into plant cells to reduce or prevent the expression of endogenous plant genes is described. Specifically, various plasmid vectors derived from genome A or B components of tomato golden mosaic virus (TGMV) or cabbage leaf curl virus (CbLCV) with inserts contg. mutated marker genes or their homologous sequences are prepd. Non-phloem-limited gene **silencing** of endogenous genes can be detected and **silencing** occurs in cells lacking detectable levels of viral DNA in the **silenced** tissues. Studies on the size limitation of foreign DNA inserts show that concomitant symptom development varied depending upon the target gene and insert size, with larger inserts producing milder symptoms. The genes tested for **silencing** include the essential gene encoding a subunit of magnesium chelatase (su), proliferating cell nuclear antigen (PCNA), and plant CH42 locus; and reporter gene for green fluorescent protein (gfp). Multiple gene can be **silenced** simultaneously from different components of the same viral vector. **Geminivirus** -derived vectors can be used to study genes involved in meristem function in intact plants. Further provided are methods of **silencing** one or more plant genes, for example, to reduce unwanted gene products or for rapid screening of gene function in plants.

L2 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB The introduction of DNA episomes into plant cells to reduce or prevent the expression of endogenous plant genes is described. Cabbage leaf curl virus (CbLCV) and tomato golden mosaic virus (TGMV) vectors to provide **silencing**, preferably systemic **silencing**, of endogenous plant genes in a treated plant are described. The CbLCV vectors contain a heterologous DNA sequence introduced into BR1 and/or BL1 genes and another heterologous plant DNA sequence in the coding region of the CbLCV coat protein. Addnl., plant cells might also be inoculated with vectors that contain heterologous DNA sequences inserted into AL1, AL2 or AL3 intergenic or common regions. Further provided are methods of **silencing** one or more plant genes, for example, to reduce unwanted gene products or for rapid screening of gene function in plants.

L2 ANSWER 14 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 6
AB Geminiviruses are DNA viruses that replicate and transcribe their genes in plant nuclei. They are ideal vectors for understanding plant gene function because of their ability to cause systemic **silencing** in new growth and ease of inoculation. We previously demonstrated DNA episome-mediated gene **silencing** from a bipartite **geminivirus** in Nicotiana benthamiana. Using an improved vector, we now show that extensive **silencing** of endogenous genes can be obtained using less than 100 bp of homologous sequence. Concomitant symptom development varied depending upon the target gene and insert size, with larger inserts producing milder symptoms. In situ hybridization of **silenced** tissue in attenuated infections demonstrated that **silencing** occurs in cells that lack detectable levels of viral

DNA. A mutation confining the virus to vascular tissue produced extensive **silencing** in mesophyll tissue, further demonstrating that endogenous gene **silencing** can be separated from viral infection. We also show that two essential genes encoding a subunit of magnesium chelatase and proliferating cell nuclear antigen (PCNA) can be **silenced** simultaneously from different components of the same viral vector. Immunolocalization of **silenced** tissue showed that the PCNA protein was down-regulated throughout meristematic tissues. Our results demonstrate that **geminivirus**-derived vectors can be used to study genes involved in meristem function in intact plants.

L2 ANSWER 15 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB This invention provides a regulated binary plant viral expression system comprised of two chromosomally-integrated components. One component is an incomplete replicon (a pro-replicon), that contains cis-acting viral sequences required for replication and a target gene. The pro-replicon lacks a gene essential for its function, and thus cannot undergo autonomous episomal replication. The other component is a chimeric trans-acting replication gene under control of a regulated promoter. Expression of the trans-acting replication protein in plant cells contg. the pro-replicon will trigger the release of free replicon from the integrated pro-replicon, resulting in its episomal replication in trans and the expression of the target gene, if present, through gene amplification. The expression system is useful for both prodn. of foreign proteins as well as **silencing** endogenous genes and transgenes in plant tissue. Tissue-specific expression is controlled by the choice of promoter controlling the transcription of the trans-acting replication gene.

L2 ANSWER 16 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB Gene **silencing** is a multifaceted phenomenon leading to propagative down-regulation of gene expression. Gene **silencing**, first observed in plants containing transgenes, can operate both at the transcriptional and post-transcriptional levels. **Silencing** effects can be triggered by nuclear transgenes and by cytoplasmic RNA viruses, and it can be propagated between these elements and endogenous plant genes that share sequence homology. Although some aspects of gene **silencing** are becoming better understood, little is yet known about the relationship between nuclear and cytoplasmic events. Plant DNA viruses - both the ssDNA geminiviruses and the reverse-transcribing pararetroviruses - have properties with the potential to initiate gene **silencing** in the nucleus and in the cytoplasm. Characteristics include production of multiple copies of viral DNA genomes in the nucleus, illegitimate integration of viral DNA into host chromosomes mimicking transgene transformation, and generation of abundant viral RNAs in the cytoplasm. Evidence is emerging that geminiviruses and plant pararetroviruses can interact with the gene **silencing** system either from introduced DNA constructs or during viral pathogenesis. Some observations suggest there are complex relationships between DNA viral activity, transcriptional and post-transcriptional gene **silencing** mechanisms. DNA viruses also have properties consistent with an ability to counteract the plant **silencing** response. In this article, features of plant DNA viruses are discussed in relation to gene **silencing** phenomena, and the prospects for understanding the interaction between nuclear and cytoplasmic **silencing** processes.

L2 ANSWER 17 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB Novel chimeric promoters which allow controlled transcription and/or expression of a nucleic acid sequence upon **geminivirus** infection, and the use of such recombinant promoters are provided. Furthermore, recombinant genes comprising such promoters, and transgenic plant cells, and plants comprising the chimeric promoters or recombinant genes are described. It appears that upon infection of the plant with wild-type virus, or a part thereof such as the AC2 protein, expression of

adjacent genes occurs under the control and influence of a geminiviral promoter. Small nucleotide sequences, referred to as CLEs (conserved late elements), present in the geminiviral promoter, are sufficient to induce said expression. According to the current invention it is thus feasible to construct transgenic plants, comprising at least one of said CLEs or functional fragments thereof, which are resistant to geminiviral infection. To obtain this effect, adjacent to or operably linked to any of the said CLEs any gene or gene combination can be constructed, which gene or gene product is able to interfere with the outbreak or growth characteristics of the **geminivirus** in order to arrest further spread of the **geminivirus** in the infected plant or part thereof.

L2 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB The introduction of DNA episomes into plant cells to reduce or prevent the expression of endogenous nuclear or chromosomal genes is described. **Geminivirus** vectors (e.g., tomato golden mosaic virus, TGMV) to provide systemic **silencing** of an endogenous plant gene in a treated plant are described. Two markers were used to assess **silencing**: (1) the sulfur allele (su) of magnesium chelatase, and enzyme require for chlorophyll formation; and (2) the firefly luciferase gene (luc). Various portions of both marker genes were inserted into TGMV in place of the coat protein open reading frame and the constructs introduced in leaves of wild-type Nicotiana benthamiana using particle bombardment. Fragments that caused **silencing** included a 786-bp 5'-fragment of the 1392-bp su cDNA in sense and antisense orientation, and a 403-bp 3'-fragment of su cDNA. TGMV::su-induced **silencing** was propagated through tissue culture, along with the viral episome, but was not retained through meiosis. Systemic down-regulation of a constitutively expressed luciferase transgene in plants was achieved following infection with TGMV vectors carrying a 62-bp portion of luc in sense or antisense orientation. Thus, a nuclear-localized DNA virus (such as the TGMV **geminivirus**) carrying sequences complementary to (or having substantial sequence similarity to) chromosomal genes can **silence** the chromosomal gene.

L2 ANSWER 19 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB The present invention provides methods for rapidly detg. the function of nucleic acid sequences by transfecting the same into a host organism to effect expression. Phenotypic and biochem. changes produced thereby are then analyzed to ascertain the function of the nucleic acids which have been transfected into the host organism. The invention also provides methods for **silencing** endogenous genes by transfecting hosts with nucleic acid sequences to effect expression of the same. The present invention also provides methods for selecting desired functions of RNAs and proteins by the use of virus vectors to express libraries of nucleic acid sequence variants. Moreover, the present invention provides methods for inhibiting an endogenous protease of a plant host.

L2 ANSWER 20 OF 22 CAPLUS COPYRIGHT 2003 ACS
AB This invention provides a regulated binary plant viral expression system comprised of two chromosomally-integrated components. One component is a pro-replicon, which contains cis-acting viral sequences (required for replication) and a target gene. The pro-replicon lacks the replication gene essential for replicon replication, and thus cannot undergo autonomous episomal replication. The other component is a chimeric trans-acting replication gene comprising a regulated promoter operably-linked to the coding region for a viral replication protein. Regulated expression of the trans-acting replication protein in plant cells also contg. the pro-replicon will trigger the release of free replicon from the integrated pro-replicon, resulting in its episomal replication in trans and the expression of the target gene, if present, through gene amplification. The expression system is useful for both prodn. of foreign proteins as well as **silencing** endogenous genes and transgenes in plant tissue. Tissue-specific expression is controlled

by the choice of promoter controlling the transcription of the trans-acting replication gene.

L2 ANSWER 21 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 7

AB A vector that produces DNA replicons (multicopy plant episomes) was constructed using elements of the gemini-virus tobacco yellow dwarf virus (TYDV). All plant cells contain an integrated chromosomal T-DNA copy of the TYDV elements that provides a template for the production of episomes in the cell nucleus. Transgenic Petunia hybrida plants containing a CaMV 35S promoter-driven chalcone synthase A (ChsA) gene cloned into the episomal vector produced flowers with a white-spotted phenotype at high frequency. The spots were found at random locations in the petals and occurred in corresponding positions in both the upper and lower epidermis, indicating that the spots were non-clonal. The spotted phenotype was somatically stable and was inherited through meiosis. In white-spotted flower tissue, steady-state ChsA mRNA levels were down-regulated but rates of RNA transcription were unaffected, suggesting that the phenotype resulted from post-transcriptional gene **silencing** of the endogenous and episomal ChsA genes. Increases in both the frequency and extent of gene

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in mature flowers, flower buds and young and fully expanded leaves. Relatively small increases in episome copy number (less than threefold) appeared sufficient to trigger the gene-**silenced** phenotype.

L2 ANSWER 22 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 8

AB The **geminivirus** tomato golden mosaic virus (TGMV) replicates in nuclei and expresses genes from high copy number DNA episomes. The authors used TGMV as a vector to determine whether episomal DNA can cause **silencing** of homologous, chromosomal genes. Two markers were used to assess **silencing**: (1) the sulfur allele (su) of magnesium chelatase, an enzyme required for chlorophyll formation; and (2) the firefly luciferase gene (luc). Various portions of both marker genes were inserted into TGMV in place of the coat protein open-reading frame and the constructs were introduced into intact plants using particle bombardment. When TGMV vectors carrying fragments of su (TGMV::su) were introduced into leaves of wild-type Nicotiana benthamiana, circular, yellow spots with an area of several hundred cells formed after 3-5 days. Systemic movement of TGMV::su subsequently produced variegated leaf and stem tissue. Fragments that caused **silencing** included a 786 bp 5' fragment of the 1392 bp su cDNA in sense and anti-sense orientation, and a 403 bp 3' fragment. TGMV::su-induced **silencing** was propagated through tissue culture, along with the viral episome, but was not retained through meiosis. Systemic downregulation of a constitutively expressed luciferase transgene in plants was achieved following infection with TGMV vectors carrying a 623 bp portion of luc in sense or anti-sense orientation. These results establish that homologous DNA sequences localized in nuclear episomes can modulate the expression of active chromosomal genes.

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=> d 11-22 ti

L2 ANSWER 11 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

TI Meristematic gene **silencing** using **geminivirus**-derived vectors.

L2 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI Suppression of plant gene expression using **geminivirus** TGMV or CbLCV vectors

L2 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI Use of cabbage leaf curl and tomato golden mosaic viral vectors for systemic **silencing** of endogenous plant gene expression

L2 ANSWER 14 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 6
TI **Silencing** of a meristematic gene using **geminivirus** -derived vectors.

L2 ANSWER 15 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI Binary viral expression system for plants using site-specific recombination to regulate the formation of a replication-competent episome

L2 ANSWER 16 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Plant DNA viruses and gene **silencing**.

L2 ANSWER 17 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI **Geminivirus** inducible promoter sequences and the uses thereof to control **geminivirus** infection in plants

L2 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI Suppression of gene expression in plants using **geminivirus** vectors

L2 ANSWER 19 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI Method of determining the function of nucleotide sequences and the proteins they encode by transfecting the same into a host

L2 ANSWER 20 OF 22 CAPLUS COPYRIGHT 2003 ACS
TI Binary viral expression system for use in plants

L2 ANSWER 21 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 7
TI Post-transcriptional **silencing** of chalcone synthase in petunia using a **geminivirus**-based episomal vector.

L2 ANSWER 22 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2003) DUPLICATE 8
TI Gene **silencing** from plant DNA carried by a **geminivirus**
.

=> d 11 so

L2 ANSWER 11 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Plant Biology (Rockville), (2002) Vol. 2002, pp. 25.
http://www.aspb.org/meetings/. print.
Meeting Info.: Annual Meeting of the American Society of Plant Biologists on Plant Biology Denver, CO, USA August 03-07, 2002 American Society of Plant Biologists
.

=> d 12 so

L2 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2003 ACS
SO PCT Int. Appl., 92 pp.
CODEN: PIXXD2

=> d 12 pi

L2 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2003 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001094604	A2	20011213	WO 2001-US18783	20010607
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002083491	A1	20020627	US 2001-876503	20010607
	EP 1287151	A2	20030305	EP 2001-946235	20010607
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

=> d 13 pi

L2 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2003 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001094603	A2	20011213	WO 2001-US18425	20010607
	WO 2001094603	A3	20020523		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 2002148005	A1	20021010	US 2001-876360	20010607
	EP 1287150	A2	20030305	EP 2001-942054	20010607
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

=> d 14 so

L2 ANSWER 14 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 6
SO The Plant journal : for cell and molecular biology, Aug 2001. Vol. 27, No. 4. p. 357-366
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> d 16 so

L2 ANSWER 16 OF 22 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

SO Plant Molecular Biology, (June, 2000) Vol. 43, No. 2-3, pp. 307-322. print.
ISSN: 0167-4412.

=> d 18 pi

L2 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2003 ACS

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9950429	A1	19991007	WO 1999-US6082	19990319
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2324420	AA	19991007	CA 1999-2324420	19990319
	AU 9931048	A1	19991018	AU 1999-31048	19990319
	AU 756831	B2	20030123		
	EP 1068340	A1	20010117	EP 1999-912737	19990319
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

=> d 21 so

L2 ANSWER 21 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 7
SO The Plant journal : for cell and molecular biology, Sept 1998. Vol. 15, No. 5. p. 593-604
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> d 21 au

L2 ANSWER 21 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 7
AU Atkinson, R.G.; Bieleski, L.R.F.; Gleave, A.P.; Janssen, B.J.; Morris, B.A.M.

=> d 22 so

L2 ANSWER 22 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2003) DUPLICATE 8
SO The Plant journal : for cell and molecular biology, Apr 1998. Vol. 14, No. 1. p. 91-100
Publisher: Oxford : Blackwell Sciences Ltd.
ISSN: 0960-7412

=> s dna virus and plant? and silenc?
L3 14 DNA VIRUS AND PLANT? AND SILENC?

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4 10 DUP REM L3 (4 DUPLICATES REMOVED)

=> d 1-10 ti]
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In a multifile environment, a format can only be used if it is valid
in at least one of the files. Refer to file specific help messages
or the STNGUIDE file for information on formats available in
individual files.
REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):ti

L4 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
TI Using Double-stranded RNA to Prevent in Vitro and in Vivo Viral Infections
by Recombinant Baculovirus

L4 ANSWER 2 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Transcriptional **silencing** of geminiviral promoter-driven
transgenes following homologous virus infection.

L4 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI RNAi targeting of **DNA virus** in **plants**.

L4 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2
TI Progression of geminivirus-induced transgene **silencing** is
associated with transgene methylation

L4 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Transgene **silencing** by the host genome defense: Implications for
the evolution of epigenetic control mechanisms in **plants** and
vertebrates.

L4 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 3
TI **Plant** DNA viruses and gene **silencing**

L4 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2003 ACS
TI Characterization of homology-dependent gene **silencing** induced by
a **DNA virus** in Nicotiana benthamiana

L4 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2003 ACS
TI Suppression of gene expression in **plants** using geminivirus
vectors

L4 ANSWER 9 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Suppression of gene **silencing**: A general strategy used by
diverse DNA and RNA viruses of **plants**.

L4 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 4
TI Transcriptional and posttranscriptional **plant** gene
silencing in response to a pathogen

=> d 2 ab

L4 ANSWER 2 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB Promoters isolated from the Tomato leaf curl virus (TLCV) drive both
constitutive and tissue-specific expression in transgenic tobacco.
Following systemic TLCV infection of **plants** stably expressing
TLCV promoter:GUS transgenes, transgene expression driven by all six TLCV
promoters was **silenced**. **Silencing** in the TLCV coat
protein promoter: GUS **plants** (V2:GUSDELTAC) was characterized in
more detail. Transgene **silencing** observed in leaf, stem, and
preanthesis floral tissue occurred with the continued replication of TLCV
in host tissues. Infection of the V2:GUSDELTAC **plants** with

heterologous geminiviruses did not result in transgene **silencing**, indicating that **silencing** was specifically associated with TLCV infection. Nuclear run-on assays indicated that **silencing** was due to the abolition of transcription from the V2:GUSDELTAC transgene. Bisulfite sequencing showed that **silencing** was associated with cytosine hypermethylation of the TLCV-derived promoter sequences of the V2:GUSDELTAC transgene. Progeny derived from V2:GUSDELTAC **plants** **silenced** by TLCV infection were analyzed. Transgene expression was **silenced** in progeny seedlings but was partially reactivated in the majority of **plants** by 75 days postgermination. Progeny seedlings treated with the nonmethylatable cytosine analog 5-azacytidine or the histone deacetylase inhibitor sodium butyrate exhibited partial reactivation of expression. This is the first report of the hypermethylation of a virus-derived transgene associated with a **DNA virus** infection.

=> d 3 ab

L4 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

=> d 3 so

L4 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Nature Biotechnology, (February 2003, 2003) Vol. 21, No. 2, pp. 131-132. print.
ISSN: 1087-0156.

=> d 3 aU

L4 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AU Pooggin, Mikhail (1); Shivaprasad, P. V.; Veluthambi, K.; Hohn, Thomas

=> d 5 ab

L4 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB Increasing evidence supports the idea that various transgene **silencing** phenomena reflect the activity of diverse host defense responses that act ordinarily on natural foreign or parasitic sequences such as transposable elements, viroids, RNA and DNA viruses, and bacterial DNA. Transgenes or their transcripts can resemble these cellular invaders in a number of ways, thus making them targets of host protective reactions. At least two distinct host defense systems operate to **silence** transgenes. One acts at the genome level and is associated with de novo DNA methylation. A second line of defense operates post-transcriptionally and involves sequence-specific RNA degradation in the cytoplasm. Transgenes that are **silenced** as a consequence of the genome defense are revealing that de novo methylation can be cued by DNA-DNA or RNA-DNA interactions. These methylation signals can be interpreted in the context of transposable elements or their transcripts. During evolution, as transposable elements accumulated in **plant** and vertebrate genomes and as they invaded flanking regions of genes, the genome defense was possibly recruited to establish global epigenetic mechanisms to regulate gene expression. Transposons integrated into promoters of host genes could conceivably change expression patterns and attract methylation, thus imposing on endogenous genes the type of epigenetic regulation associated with the genome defense. This recruitment process might have been particularly effective in the polyploid genomes of **plants** and early vertebrates. Duplication of the entire genome in polyploids buffers against insertional mutagenesis by transposable elements and permits their infiltration into individual copies of

duplicated genes.

=> d 5 so

L4 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Plant Molecular Biology, (June, 2000) Vol. 43, No. 2-3, pp. 401-415. print.
ISSN: 0167-4412.

=> d 5 kwic

L4 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
TI Transgene **silencing** by the host genome defense: Implications for the evolution of epigenetic control mechanisms in **plants** and vertebrates.
AB Increasing evidence supports the idea that various transgene **silencing** phenomena reflect the activity of diverse host defense responses that act ordinarily on natural foreign or parasitic sequences such as. . . number of ways, thus making them targets of host protective reactions. At least two distinct host defense systems operate to **silence** transgenes. One acts at the genome level and is associated with de novo DNA methylation. A second line of defense operates post-transcriptionally and involves sequence-specific RNA degradation in the cytoplasm. Transgenes that are **silenced** as a consequence of the genome defense are revealing that de novo methylation can be cued by DNA-DNA or RNA-DNA. . . signals can be interpreted in the context of transposable elements or their transcripts. During evolution, as transposable elements accumulated in **plant** and vertebrate genomes and as they invaded flanking regions of genes, the genome defense was possibly recruited to establish global. . . epigenetic regulation associated with the genome defense. This recruitment process might have been particularly effective in the polyploid genomes of **plants** and early vertebrates. Duplication of the entire genome in polyploids buffers against insertional mutagenesis by transposable elements and permits their. . .
BC Viruses - General 02500
Plantae - Unspecified 11000
Vertebrata - Unspecified 85150
IT Miscellaneous Descriptors
DNA-DNA interactions; RNA-DNA interactions; epigenetic control: evolution; evolution; host genome defense; transgene **silencing** ; viroids
ORGN Super Taxa
Plantae; Vertebrata: Chordata, Animalia; Viruses: Microorganisms
ORGN Organism Name
DNA virus (Viruses); RNA virus (Viruses); **plants** (**Plantae**): genome; vertebrates (Vertebrata): genome
ORGN Organism Superterms
Animals; Chordates; Microorganisms; Nonhuman Vertebrates; **Plants**; Vertebrates; Viruses

=> d 7 ab

L4 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2003 ACS
AB Unavailable

=> d 7 so

L4 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2003 ACS
SO (1999) 168 pp. Avail.: UMI, Order No. DA9960122
From: Diss. Abstr. Int., B 2000, 61(2), 667

=> d 8 pi

L4 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2003 ACS

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9950429	A1	19991007	WO 1999-US6082	19990319
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2324420	AA	19991007	CA 1999-2324420	19990319
AU 9931048	A1	19991018	AU 1999-31048	19990319
AU 756831	B2	20030123		
EP 1068340	A1	20010117	EP 1999-912737	19990319
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

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L4 ANSWER 9 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

=> d 9 so

L4 ANSWER 9 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
SO Proceedings of the National Academy of Sciences of the United States of America, (Nov. 23, 1999) Vol. 96, No. 24, pp. 14147-14152.
ISSN: 0027-8424.

=> d 9 ab

L4 ANSWER 9 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB In transgenic and nontransgenic **plants**, viruses are both initiators and targets of a defense mechanism that is similar to posttranscriptional gene **silencing** (PTGS). Recently, it was found that potyviruses and cucumoviruses encode pathogenicity determinants that suppress this defense mechanism. Here, we test diverse virus types for the ability to suppress PTGS. Nicotiana benthamiana exhibiting PTGS of a green fluorescent protein transgene were infected with a range of unrelated viruses and various potato virus X vectors producing viral pathogenicity factors. Upon infection, suppression of PTGS was assessed in **planta** through reactivation of green fluorescence and confirmed by molecular analysis. These experiments led to the identification of three suppressors of PTGS and showed that suppression of PTGS is widely used as a counter-defense strategy by DNA and RNA viruses. However, the spatial pattern and degree of suppression varied extensively between viruses. At one extreme, there areviruses that suppress in all tissues of all infected leaves, whereas others are able to suppress only in the veins of new emerging leaves. This variation existed even between closely related members of the potexvirus group. Collectively, these results suggest that virus-encoded suppressors of gene **silencing** have distinct modes of action, are targeted against distinct components of the host gene-**silencing** machinery, and that there is dynamic evolution of the

host and viral components associated with the gene-**silencing** mechanism.

=> d 10 ab

L4 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 4

AB **Plants** are able to respond to pathogen attack to restrain development of a systemic infection. The response of Brassica napus (oilseed rape) to systemic infection with the **DNA virus** cauliflower mosaic virus was shown to result in enhancement and subsequent suppression of viral gene expression in parallel with changes in symptom expression. Transgenes with homol. to viral sequences were also affected. This phenomenon, which was shown to be mediated by both transcriptional and posttranscriptional mechanisms, might be related to regulation of highly expressed genetic elements.